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ALMA-ATA INSTITUTE OF NUCLEAR PHYSICS OF THE KAZAKH ACADEMY OF SCIENCES, USSR

25X

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SUMMARY

Photography from [redacted] missions over the Alma-Ata area of the USSR reveals the location of the Alma-Ata Institute of Nuclear Physics of the Kazakh Academy of Sciences, the plans for which had been announced by Radio Moscow in 1958. Identification of the nuclear reactor building, nine apparently completed laboratory buildings and five under construction, and extensive housing facilities indicates that this installation is to be one of the most important nuclear research centers in the USSR.

INTRODUCTION

In a broadcast on 2 June 1958, Radio Moscow announced that "work has started on the construction of a scientific center of the Institute of Nuclear Physics of the Kazakh Academy of Sciences. The administrative buildings of the institute, 20 of its laboratories, and houses for the scientists are being built in a picturesque area near Alma-Ata. There will be about 900 scientists, engineers, and technicians working at this new scientific center. Kazakh's first nuclear reactor is to be installed in the new center. In one of the laboratories a cyclotron

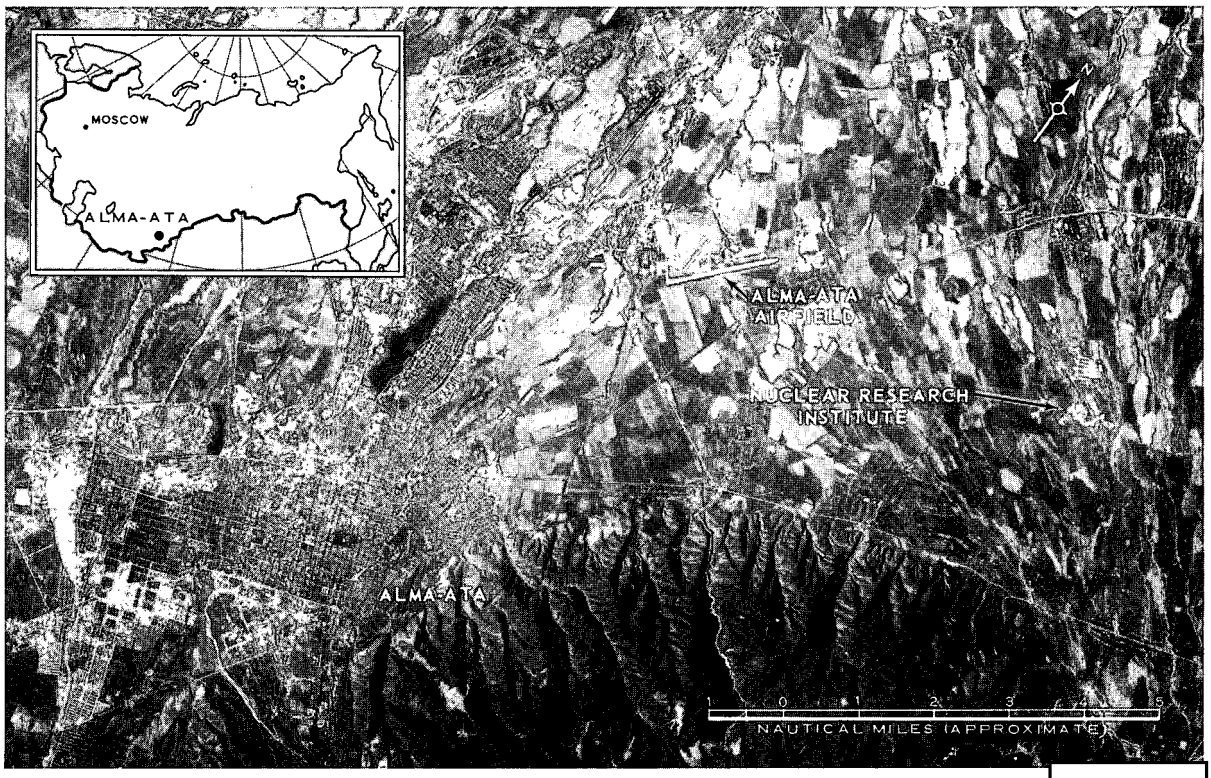

FIGURE 1. LOCATION OF ALMA-ATA INSTITUTE OF NUCLEAR PHYSICS OF THE KAZAKH ACADEMY OF SCIENCES, USSR. [redacted]

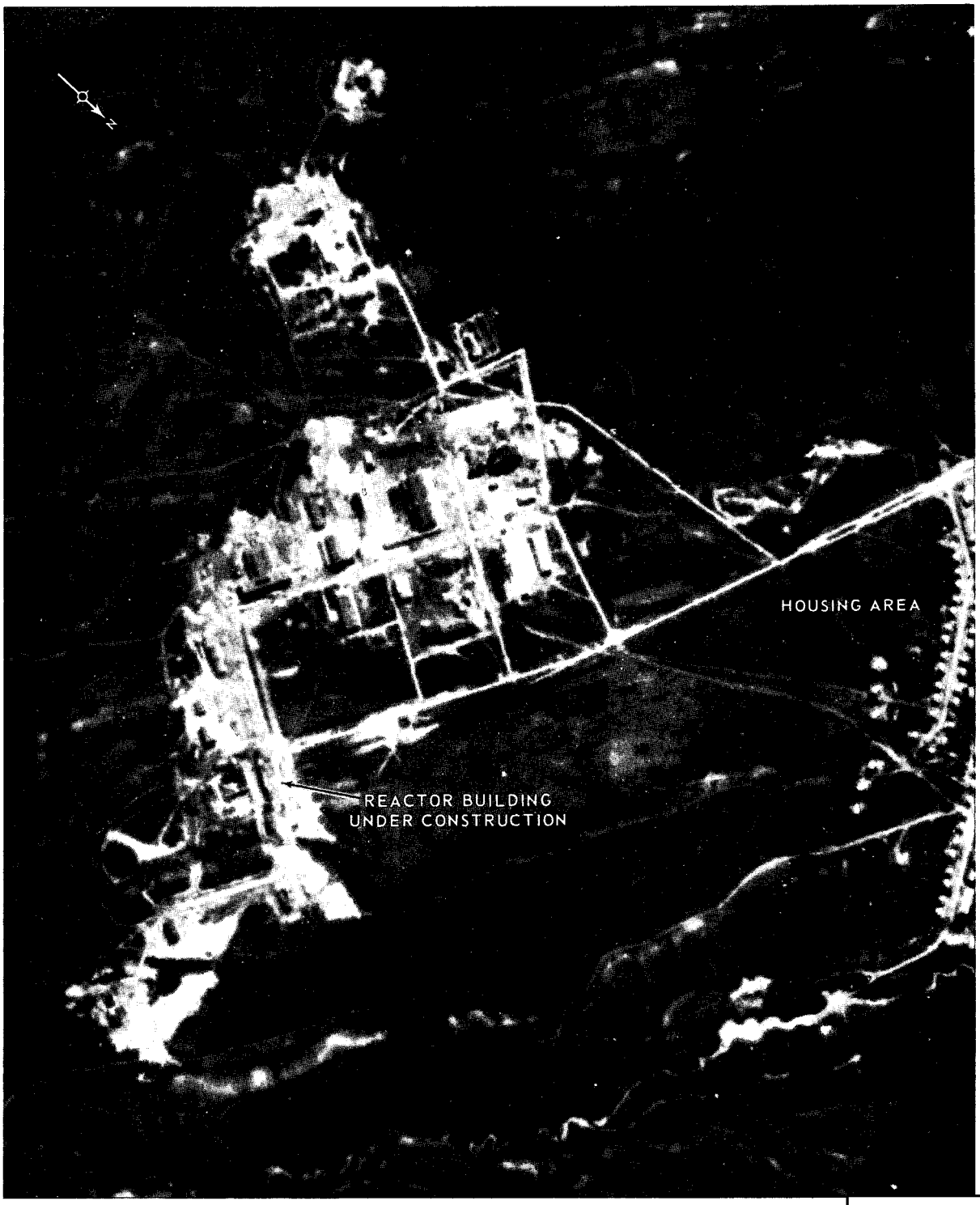

FIGURE 2. ALMA-ATA INSTITUTE OF NUCLEAR PHYSICS, [redacted] 25X

will be equipped. Foundations are being laid for the radio-chemistry laboratory and nuclear energy laboratory buildings. In this center there will also be laboratories to study nuclear reactions, transistors, the physics of metals, and other subjects." 1/

This nuclear research center designated as Alma-Ata Institute of Nuclear Physics of the Kazakh Academy of Sciences, USSR, has been identified at 43-21-20N 77-09-30E, approximately 12 nautical miles (nm) northeast of Alma-Ata and 6 nm east of Alma-Ata Airfield (Figure 1). The location is a farmland area in the foothills of the Khrebet (mountain range) Zailiyskiy Alatau. The site of the center, which appears to be secured on at least three sides by a fence, is isolated; the nearest village is about 1.75 nm to the north-northwest. An all-weather road branching from the main highway between Alma-Ata and Novoalekseyevka apparently was constructed to serve the site, since it ends at the institute.

The site of the institute was covered by [redacted]; at that time all the components of the institute were in an advanced stage of construction, with the exception of the reactor building, and a large excavation was evident for this structure. A large number of buildings in the housing area had been completed. 25X

The most recent photography of the institute was obtained in [redacted] however, [redacted] (Figure 2) provides the best photographic coverage of the area. A line drawing of the site (Figure 3) presents buildings and construction activity discernible on the [redacted] photography. The [redacted] coverage (Figure 4) reveals that many of the laboratory buildings had been completed by that date, but the reactor building was not entirely roofed. Some of the streets within the institute, however, were not yet paved, landscaping had not been begun, and a considerable amount of construction activity was still taking place, all indications that only part of the institute could have been in operation in [redacted] 25X

THE INSTITUTE

All facilities of the nuclear research institute except housing are grouped within an irregularly shaped area which measures approximately 5,000 feet from east to west by about 2,500 feet from north to south. However, the overall area of the institute, as bounded by a fence which can be traced on at least three sides of the site, is much larger than the built-up section (Figure 3) and allows for possible expansion.

The most important identifiable research facility at this institute, the nuclear reactor building (item 34, Figure 3), is under construction at the southeastern corner of the site. Analysis of available photography indicates that the structural features of this T-shaped building apparently are similar to those of recently identified reactor buildings at Gatchina, Kibray, and Kiyev in the USSR, and at Magurele, Rumania. Ground photography of the Rumanian building makes it possible to portray many of the exterior features of the structure in a perspective view (Figure 5).

The bar section of the reactor building, which will contain control rooms and laboratories, appears to be completed on the most recent photography; a one-story narrow elevation above the rest of the roof across each end of the bar, a characteristic of all the reactor buildings noted above, is also discernible on the one at Alma-Ata. The stem section of the T will contain the reactor and appears almost com-

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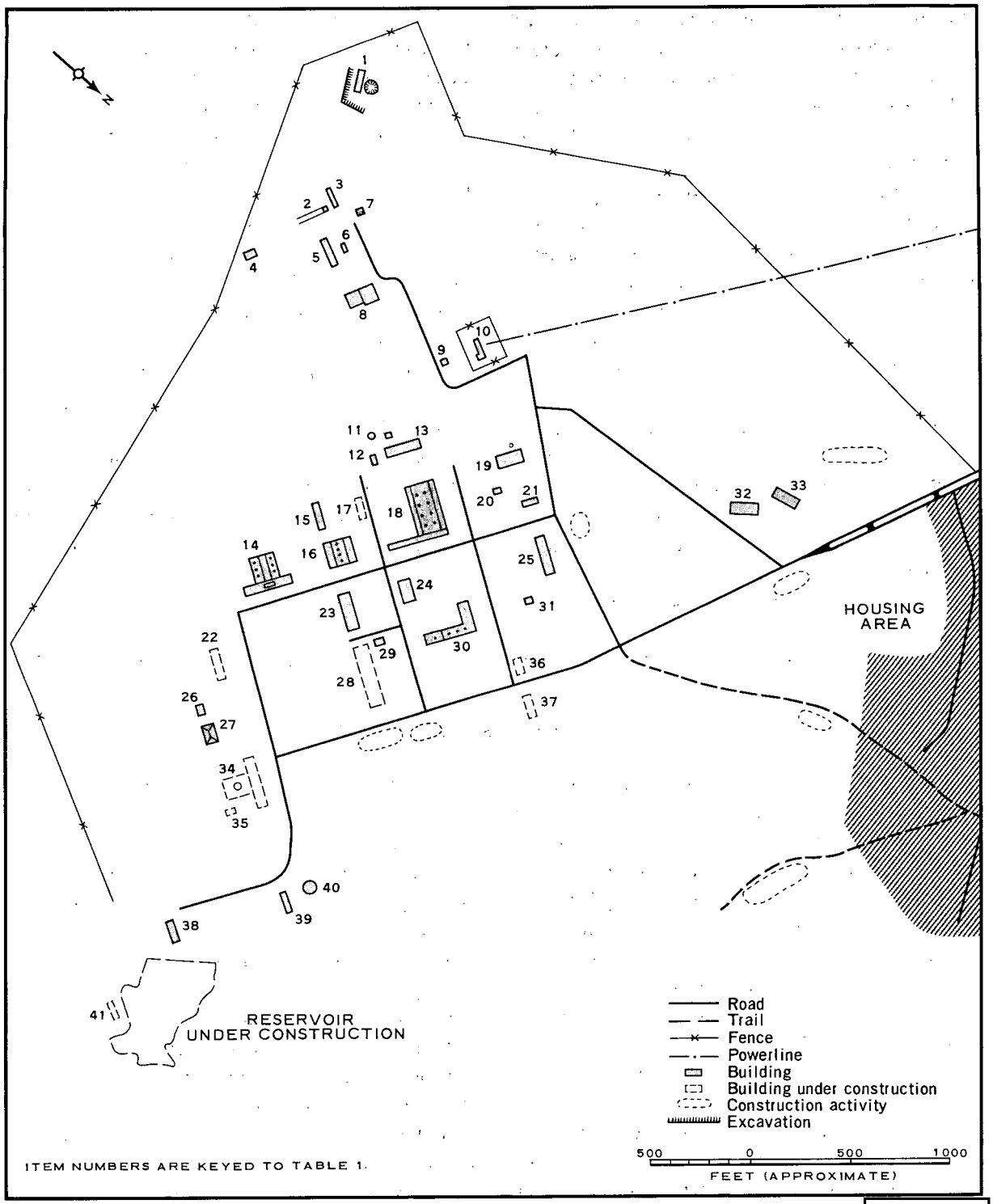

FIGURE 3. ALMA-ATA INSTITUTE OF NUCLEAR PHYSICS.

25X

pleted. The good-quality photography of [redacted] reveals a structure which apparently is the reactor being mounted in the middle of the stem section. A facility under construction near the reactor building is possibly an exhaust and filter building (item 35, Figure 3).

At least nine laboratory buildings are apparently completed; these structures are conventional in design except for three monitor-roofed buildings (items 14, 16, and 18, Figure 3) which also have roof ventilators. Five other laboratory buildings within the site are at various stages of construction.

An abundant supply of water is available for the reactor and other components of the institute from the numerous snow- and glacier-fed mountain streams in the surrounding area. Two reservoirs are under construction, one immediately east of the reactor building and the other immediately east of the housing area (Figure 4).

A listing of the principal buildings and other structures at the research institute, including dimensions and functions wherever possible, is presented in Table 1 which is keyed to Figure 3.

Table 1. Description of Structures at the Nuclear Research Institute (Item numbers are keyed to Figure 3)

Item	Description	Dimensions (ft)
1	Unidentified building within excavated area which is probably a quarry	---
2	Cement plant with conveyer	---
3	Unidentified building probably associated with cement plant	---
4	Probable workshop	---
5	Probable storage building	---
6	Unidentified building	---
7	Probable workshop	---
8	Probable workshop	---
9	Unidentified building	---
10	Electric substation with associated control building	---
11	Unidentified circular structure	---
12	Unidentified building	50 x 25 height, 30
13	Laboratory building	185 x 50
14	Laboratory building; T-shaped, monitor-roofed, roof ventilators on stem section	bar: 245 x 50 stem: 135 x 115
15	Laboratory building	140 x 40
16	Laboratory building; monitor-roofed, roof ventilators	140 x 135 height, 40
17	Laboratory building under construction	105 x 35
18	Laboratory building; L-shaped, monitor-roofed, roof ventilators, leg section lower than base	base: 245 x 140 leg: 300 x 25
19	Heat and steam plant with associated stack	130 x 60 height, 45
20	Probable machine shop	---
21	Probable machine shop	75 x 30
22	Laboratory building under construction	145 x 35
23	Laboratory building	180 x 60
24	Laboratory building	115 x 60 height, 20
25	Laboratory building	190 x 55
26	Unidentified building	60 x 35
27	Unidentified building	90 x 50 height, 20
28	Laboratory building under construction; construction began after [redacted]	---
29	Unidentified building	45 x 35
30	Laboratory building; L-shaped; construction completed between June [redacted]	base: 140 x 55 leg: 205 x 60 height, 30
31	Unidentified building	---
32	Unidentified building	---
33	Unidentified building	---
34	Reactor building under construction; T-shaped	bar: 265 x 50 stem: 120 x 95
35	Possible exhaust and filter building under construction	---
36	Laboratory building under construction; construction began after [redacted]	---
37	Laboratory building under construction; construction began after [redacted]	---
38	Unidentified building	95 x 35
39	Unidentified building	95 x 35
40	Unidentified circular structure	---
41	Unidentified building under construction	---

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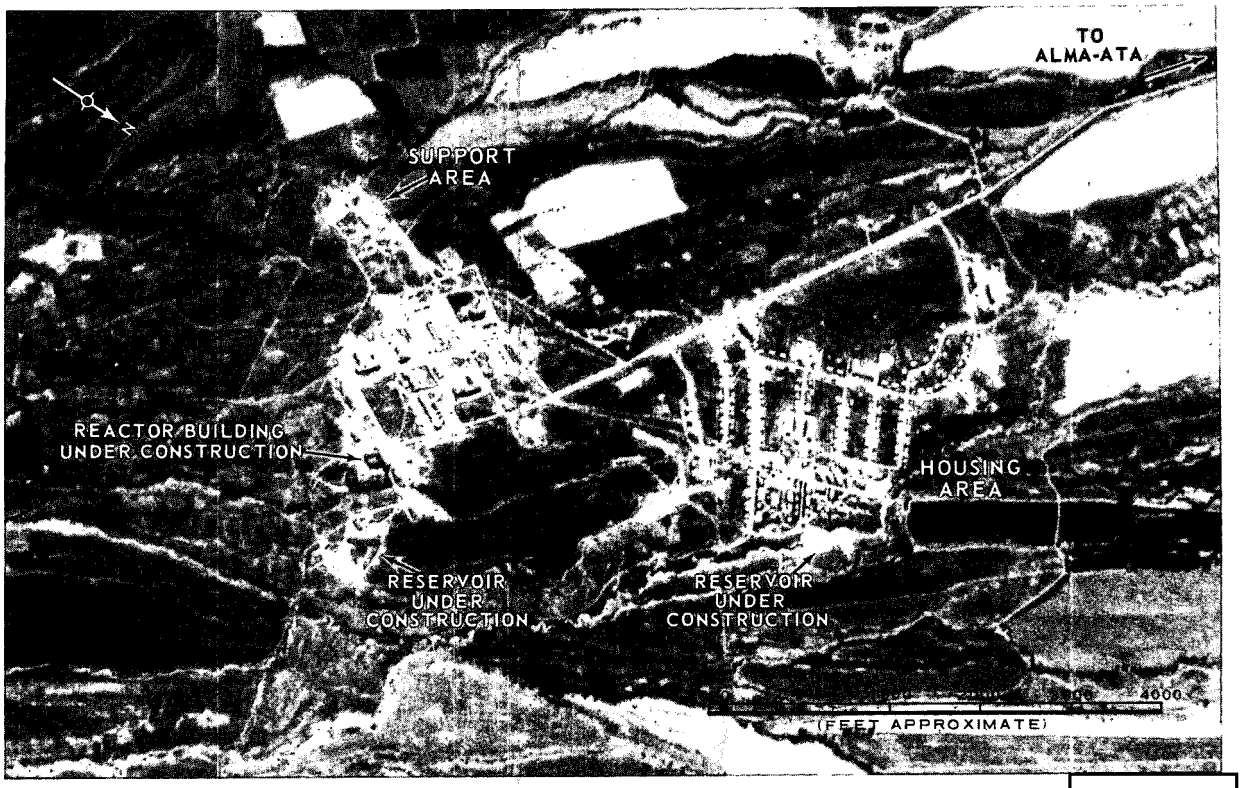

FIGURE 4. ALMA-ATA INSTITUTE OF NUCLEAR PHYSICS, [redacted] 25X

SUPPORT FACILITIES

At least 12 small support and service buildings and construction sheds are scattered throughout the site of the institute. A heat and steam plant (item 19, Figure 3) which serves the institute and the housing area is located at the western edge of the cluster of major buildings; a large coal dump is evident nearby. A cement plant (item 2) and maintenance buildings are located in the southwestern section of the institute.

An electric substation (item 10), which is separately secured and is served by a powerline from the northwest, is located on the western side of the area of principal buildings. The number of transformers cannot be accurately determined because of the small scale of the photography.

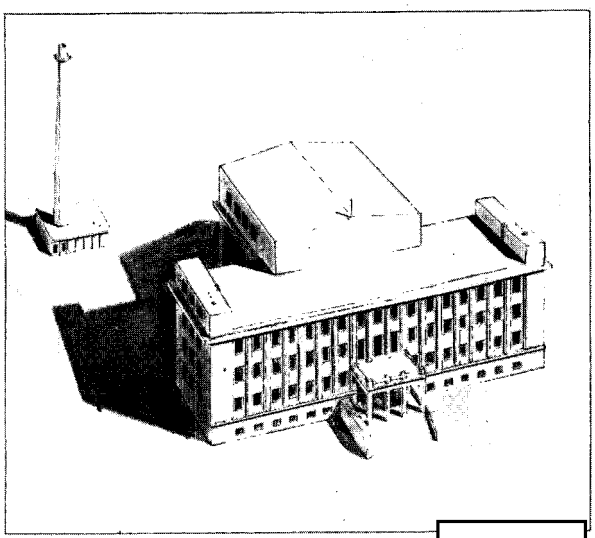

FIGURE 5. REACTOR BUILDING WITH ASSOCIATED EXHAUST AND FILTER BUILDING, MAGURELE, RUMANIA. (Perspective sketch based on ground photography.) [redacted] 25X

HOUSING

The importance of this nuclear research institute, apparently the only one in the Kazakh SSR, is highlighted by the extent of the associated housing area north-northwest of the principal research buildings (Figure 4). A self-sufficient community of homes, apartment buildings, commercial facilities, and service structures has been built and is being expanded further. Already completed are at least 138 single homes, 49 duplex houses, 30 multifamily apartment buildings, and about 15 large structures which apparently comprise the administrative, cultural, welfare, and business establishments.

REFERENCES

[redacted]

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MAPS OR CHARTS

2RTS. US Air Target Chart, Series 100, Sheet 0329-9999-100A, 3d ed, Jan 58, scale 1:100,000 (SECRET)

DOCUMENTS

X1 [redacted]

REQUIREMENT

CIA. OSI/C-SI4-81,047

PROJECT

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